

CLAIMS

What is claimed is:

1. An isolated nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:2n-1, wherein n is an integer between 1 and 85.
2. An isolated nucleic acid molecule comprising a nucleic acid sequence encoding an amino acid sequence selected from the group consisting of SEQ ID NO:2n, wherein n is an integer between 1 and 85.
3. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:2n, wherein n is an integer between 1 and 85.
4. An isolated polypeptide of claim 3, wherein the isolated polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:86, SEQ ID NO:88, SEQ ID NO:90, SEQ ID NO:92, SEQ ID NO:96, SEQ ID NO:98, SEQ ID NO:100, SEQ ID NO:102, SEQ ID NO:104, SEQ ID NO:106, SEQ ID NO:108, and SEQ ID NO:110.
5. An isolated polypeptide of claim 3, wherein the isolated polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:112, SEQ ID NO:114, SEQ ID NO:116, SEQ ID NO:118, SEQ ID NO:120, SEQ ID NO:122, SEQ ID NO:124, SEQ ID NO:126, SEQ ID NO:128, SEQ ID NO:130, SEQ ID NO:136, SEQ ID NO:138, SEQ ID NO:144, SEQ ID NO:148, SEQ ID NO:152, and SEQ ID NO:154.
6. An isolated polypeptide of claim 3, wherein the isolated polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, and SEQ ID NO:28.
7. An isolated polypeptide of claim 3, wherein the isolated polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:30, SEQ ID NO:32, SEQ

ID NO:34, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:40, SEQ ID NO:42, SEQ ID NO:44, and SEQ ID NO:156

8. An isolated polypeptide of claim 3, wherein the isolated polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:46, SEQ ID NO:48, SEQ ID NO:50, SEQ ID NO:52, and SEQ ID NO:54.

9. An isolated polypeptide of claim 3, wherein the isolated polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:56, SEQ ID NO:58, and SEQ ID NO:168.

10. An isolated polypeptide of claim 3, wherein the isolated polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:64, SEQ ID NO:66, SEQ ID NO:68, SEQ ID NO:70, SEQ ID NO:72, SEQ ID NO:74, SEQ ID NO:76, SEQ ID NO:78, and SEQ ID NO:170.

11. A method for identifying compounds that modulate target polypeptide activity comprising:

(a) combining a test compound with a target polypeptide and a substrate of the target polypeptide; and

(b) determining whether the test compound modulates the activity of the target polypeptide;

wherein the target polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2n, wherein n is an integer between 1 and 85, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least one domain of SEQ ID NO:2n, and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.

12. The method of claim 11, further comprising a step of identifying the test compound that modulates the target polypeptide activity by inhibiting the target polypeptide activity as an inhibitor of the target polypeptide activity.
13. The method of claim 11, further comprising a step of identifying the test compound that modulates the target polypeptide activity by inhibiting the target polypeptide activity as an antagonist of the target polypeptide.
14. The method of claim 11, further comprising a step of identifying the test compound that modulates the target polypeptide activity by activating the target polypeptide activity as an activator of the target polypeptide activity.
15. The method of claim 11, further comprising a step of identifying the test compound that modulates the target polypeptide activity by activating the target polypeptide activity as an agonist of the target polypeptide.
16. The method of claim 11, further comprising a step of identifying the test compound that modulates the target polypeptide activity as an enhancer of insulin secretion.
17. The method of claim 11, further comprising a step of identifying the test compound that modulates the target polypeptide activity as a therapeutic for treatment of insulin resistance.
18. The method of claim 11, further comprising a step of identifying the test compound that modulates the target polypeptide activity as a therapeutic for treatment of obesity.
19. The method of claim 11, further comprising a step of identifying the test compound that modulates the target polypeptide activity as a therapeutic for treatment of diabetes.
20. The method of claim 11, wherein the target polypeptide is an isolated polypeptide.
21. The method of claim 11, wherein the target polypeptide is produced by a process comprising culturing a recombinant host cell, the recombinant host cell comprising a nucleic acid encoding the target polypeptide, under conditions promoting expression of the target polypeptide.

22. The method of claim 21, wherein the nucleic acid comprises a nucleotide sequence selected from the group consisting of:

(a) SEQ ID NO:2n-1, wherein n is an integer between 1 and 85;

(b) nucleotides encoding an amino acid sequence of the at least one domain of SEQ ID NO:2n; and

(c) a nucleotide sequence encoding an amino acid sequence selected from the group consisting of SEQ ID NO:2n, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least one domain of SEQ ID NO:2n, and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.

23. The method of claim 11, wherein the target polypeptide is produced by expression of a recombinant vector comprising a nucleic acid, the nucleic acid encoding an amino acid sequence selected from the group consisting of SEQ ID NO:2n, wherein n is an integer between 1 and 85, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least one domain of SEQ ID NO:2n, and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.

24. The method of claim 23, wherein the test compound is combined with the target polypeptide in a mammalian cell grown in culture.

25. The method of claim 23, wherein the test compound is combined with the target polypeptide in vitro.

26. The method of claim 23, wherein the nucleic acid comprises a nucleotide sequence selected from the group consisting of:

(a) SEQ ID NO:2n-1, wherein n is an integer between 1 and 85;

(b) nucleotides encoding an amino acid sequence of the at least one domain of

SEQ ID NO:2n; and

c) a nucleotide sequence encoding an amino acid sequence selected from the group consisting of SEQ ID NO:2n, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least one domain of SEQ ID NO:2n, and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.

27. The method of claim 11, wherein the target polypeptide is produced by expression of an endogenous nucleic acid, the endogenous nucleic acid encoding an amino acid sequence selected from the group consisting of SEQ ID NO:2n, wherein n is an integer between 1 and 85, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least one domain of SEQ ID NO:2n; and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.

28. The method of claim 27, wherein the test compound is combined with the target polypeptide in a mammalian cell grown in culture.

29. The method of claim 27, wherein the test compound is combined with the target polypeptide in vitro.

30. The method of claim 27, wherein the endogenous nucleic acid comprises a nucleotide sequence selected from the group consisting of:

(a) SEQ ID NO:2n-1, wherein n is an integer between 1 and 85;

(b) nucleotides encoding an amino acid sequence of the at least one domain of SEQ ID NO:2n; and

(c) a nucleotide sequence encoding an amino acid sequence selected from the group consisting of SEQ ID NO:2n, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least one domain of SEQ ID NO:2n, and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.

31. An antibody that immunospecifically binds to the target polypeptide, wherein the target polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2n, wherein n is an integer between 1 and 85, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least one domain of SEQ ID NO:2n, and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.

32. The antibody of claim 31, wherein the antibody is a monoclonal antibody.

33. The antibody of claim 31, wherein the antibody is a humanized antibody.

34. The antibody of claim 31, wherein the antibody is a human antibody.

35. A method for identifying a potential therapeutic agent for use in treatment of a pathology, wherein the pathology is related to aberrant expression or aberrant physiological interactions of a target polypeptide, the method comprising:

- (a) providing a cell expressing the target polypeptide and having a property or function ascribable to the target polypeptide;
- (b) contacting the cell with a composition comprising a candidate test compound; and
- (c) determining whether the test compound alters the property or function ascribable to the target polypeptide;

whereby, if an alteration observed in the presence of the test compound is not observed when the cell is contacted with the composition in the absence of the test compound, the test compound is identified as a potential therapeutic agent; and

wherein the target polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2n, wherein n is an integer between 1 and 85, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least

one domain of SEQ ID NO:2n, and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.

36. A method for screening for a modulator of activity of or of latency or predisposition to a pathology associated with a target polypeptide, the method comprising:

(a) administering a test compound to a test animal at an increased risk for a pathology associated with the target polypeptide, wherein the test animal recombinantly expresses the target polypeptide;

(b) measuring the activity of the target polypeptide in the test animal after administering the test compound of step (a); and

(c) comparing the activity of the target polypeptide in the test animal with the activity of the target polypeptide in a control animal not administered the test compound, wherein a change in the activity of the target polypeptide in the test animal relative to the control animal indicates that the test compound is a modulator of activity of or of latency or predisposition to, a pathology associated with the target polypeptide;

wherein the target polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:2n, wherein n is an integer between 1 and 85, the amino acid sequence that is at least 95% identical to SEQ ID NO:2n, the amino acid sequence of at least one domain of SEQ ID NO:2n, and the amino acid sequence that is at least 95% identical to the at least one domain of SEQ ID NO:2n.